

STATE OF CALIFORNIA

Energy Resources Conservation
And Development Commission

In the Matter of:) Docket No. 02-AFC-01
)
Application for Certification)
for the BLYTHE ENERGY PROJECT, PHASE II)
)
_____)

ENERGY COMMISSION STAFF’S REBUTTAL TO APPLICANT’S WHITE PAPER
ON TRANSMISSION SYSTEM ENGINEERING

On December 5, 2003, applicant attached a white paper on transmission system engineering (TSE) (hereinafter “White Paper”) to its status report arguing that no further information on TSE was necessary to certify the project. Staff hereby offers this reply in order to inform the Committee on the actual status of the TSE analysis, identify the major issues, and explain why there is insufficient information at this time to certify the project.

I. Without the requested information, BEP II is not a clearly defined project that the Commission could certify.

Staff’s transmission system engineering analysis examines whether a proposed facility will be able to interconnect to the electricity grid. (See Cal. Code Regs., tit. 20, §§1741, 1743.) To be considered reliable, the interconnection must comply with the general orders of the California Public Utilities Commission (CPUC) and the reliability and planning criteria of the California Independent System Operator (Cal-ISO), Western Electricity Coordinating Council (WECC), North American Electric Reliability Council (NERC), and Western Area Power Administration (Western). (Id.)

All recent AFCs have started the interconnection process with a System Impact Study (SIS). That study contains power flow, short circuit, and stability studies that identify system reliability criteria violations, breaker overstress, and stability problems. The study then identifies feasible mitigation measures. Applicants occasionally may precede the System Impact Study with a feasibility study.

Following the System Impact Study, a Facility Study is conducted if mitigation measures were identified in the SIS. The Facility Study provides the engineering details necessary to mitigate the problems and identifies the costs of such mitigation. Should special studies such as specifying the sequencing and timing of a System Protection Scheme or an operational study be required for a feasible mitigation measure previously identified, they are conducted at a later date, sometimes after the project has been certified. One of the main purposes for the certification process is to ensure that a proposed project will provide a reliable supply of electrical energy. (Cal. Code Regs., tit. 20, §1741(a).)

These studies define the scope of the proposed project and identify whether downstream facilities will be required. If the interconnection of a project with the electricity grid would require new downstream construction or modification of transmission lines or substations, these additional facilities must be included in the Commission's analysis of the project. (Public Utilities Comm. V. Energy Resources Conservation and Development Comm., 150 Cal.App.3d 437, 451 (1984) ["if certification of a new...thermal powerplant will require construction of transmission lines that will not fall within the commission's certification jurisdiction, the additional lines must be considered part of the 'project' for purposes of the California Environmental Quality Act"].) Thus, the whole of the project that must be analyzed is left undefined absent these studies.

Applicant has further complicated the TSE analysis of BEP II by changing the proposed interconnection configuration several times, requiring staff to analyze approximately five different configurations, and the most recent project configuration was the result of a

mere sensitivity¹ study and not a complete study. Because the proposed interconnection of BEP II has been such a moving target, staff cannot adequately analyze the reliability of this energy supply without assurance that the latest configuration proposed by applicant is the final one, and the one that would ultimately be built in a timely manner before the on-line projected date of BEP II. Only the necessary interconnection requests, subsequent study agreements, study plans, schedules, and System Impact Studies can best provide this assurance.²

Without this information, it remains uncertain whether the interconnection recently proposed by applicant will be the final proposal. There has been some level of doubt cast on applicant's commitment to the most recent interconnection configuration proposal based, in part, upon comments received from Cal-ISO and SCE regarding applicant's request for approval for interconnection configurations and bulk power transmission options that have not been submitted to the Commission as part of the application proceeding. If applicant does alter their proposed interconnection configuration, there is a strong likelihood that it would change the project's first point of interconnection with the transmission grid and result in Commission jurisdiction over either 40 or 118 miles of new 500 kV transmission lines. The assertion of such jurisdiction is not discretionary and if it occurred later in the AFC process or subsequent to certification, could pose significant scheduling, as well as other, problems.

II. The Blythe Area Regional Transmission (BART) study is inadequate.

The BART study was intended to gather together all affected transmission owners to conduct a joint study to enable each transmission owner and the Cal-ISO to identify the criteria violations and the feasible mitigation measures that they would agree to to assure

¹ A sensitivity study is a lesser detailed and lower confidence analysis included as part of a main study; the main study was of a termination directly to the Cal-ISO grid at SCE's Devers Substation rather than a termination at Western's Buck Blvd Substation.

² There are many unanswered questions regarding the proposed Desert Southwest Transmission Project, through which BEP II's electricity is proposed to travel. SCE has raised serious reliability concerns for the Western Electricity Coordinating Council (WECC) grid due to the proposed line's close proximity to SCE's alignment for the Devers-Palo Verde 1 & 2 transmission lines (See Appendix A, Letter from SCE to Mr. Kalish of the Bureau of Land Management, August 18, 2003.)

that their facilities would not be damaged and system reliability would not be affected. Subsequent to the commencement of the study, however, both Western and SCE stated that they would not rely on the BART study to identify criteria violations or mitigation measures (See Appendix B, Letter from SCE to Bill Pfanner dated June 9, 2003; and Appendix C, Letter from Western to Bill Pfanner dated May 23, 2003.) Instead, these transmission owners intend to conduct their own System Impact Study to identify any criteria violations and applicable mitigation measures. The Cal-ISO likewise cannot provide approval for the interconnection to the Cal-ISO grid at SCE's Devers Substation based on the BART feasibility study and requires an SIS to address all outstanding parts (See Appendix D, Email from Mohamed Awad of Cal-ISO to Al McCuen dated 1-12-04.) Similarly, the IID may perform their own study because the BART study did not include reliability impacts to the IID system (See Appendix E, Letter from IID to Bill Pfanner [sic] dated October 22, 2003.) Thus, the BART study does not encapsulate the totality of the potential criteria violations nor does it identify the measures acceptable to the transmission owners to mitigate the impacts, as was originally intended; thus, it cannot be relied upon for any conclusion regarding LORS conformance or the identification of potential downstream new or modified facilities and any resultant impacts. Without the System Impact Studies the potential impacts of the project, its conformance with LORS, and identification of the whole of the action cannot be determined.

III. The request for a System Impact Study is consistent with the level of information analyzed in BEP I and all other siting cases.

Applicant argues that the information requested by staff in this case is not consistent with the information required in BEP I. (White Paper, p.8.) In BEP I, Western performed a System Impact Study (not a feasibility study as in BEP II) which included a load flow analysis, a short circuit analysis, and a stability analysis for the Western and surrounding systems that could be affected. The affected transmission owners relied on this study to identify the criteria violations and concomitant mitigation measures. (BEP I Commission Decision, p. 83 ["the Applicant provided information identifying Western, SCE and IID facilities with contingency related overloads which the impacted transmission owners

have attributed to BEP, and the type of mitigation acceptable to the impacted transmission owners.”].) Thus, staff received input from every affected transmission owner and was able to render a conclusion based on this input. As previously discussed, the BART study does not contain this critical information. Since the transmission owners are unwilling to rely on the BART study to identify violations and mitigation measures, staff is being consistent in asking that applicant provide the studies on which the transmission owners are willing to rely and which will identify the violations and acceptable mitigation measures.

The applicant also argues that the studies identified as necessary by staff in this proceeding should be allowed to be submitted after certification because, they claim, this was allowed in BEP I. (White Paper, p. 4.) In BEP I, however, the affected transmission owners had already identified the interconnection facilities, criteria violations and mitigation measures based on Western’s System Impact Study. Thus, a new System Impact Study or detailed facilities study was not necessary to determine LORS compliance or ensure mitigation of potential impacts. Such is not the case for BEP II. Both Western and SCE have refused to rely on the BART study to identify either criteria violations or mitigation measures and have expressly stated they will do so only in their own System Impact Studies. Likewise, IID has stated that the BART study does not constitute the necessary power flow portion of an IID System Impact Study and the Cal-ISO has indicated that they will not issue an approval for a termination of a 500 kV line at Devers absent adequate studies by SCE. Thus, because the Commission must determine LORS conformance and must identify potential impacts caused by a project and determine whether mitigation is feasible prior to certifying a project, staff must have these specific studies from these transmission owners in order to conclude its analysis.

IV. The stability and short-circuit analyses have always been provided prior to issuance of the FSA, and applicant offers no explanation as to why an exception should be made in this case.

The applicant also argues that the stability and short-circuit analyses should be provided prior to construction, not certification. Staff has never issued an FSA without short-

circuit and stability studies. While a load flow analysis focuses primarily on thermal overload of facilities, a short circuit analysis is required to determine if circuit breakers and other equipment must be replaced to prevent damage to equipment due to fault current. Costs to replace equipment can be millions of dollars; therefore, it is imperative that potential impacts be identified and acceptance of mitigation be voiced by the transmission owners prior to certification. System stability analyses are required to prevent excessive oscillations in the generator and transmission system that could lead to cascading outages, system separation and loss of load. These studies are required by NERC, WECC, Western, SCE and Cal-ISO and LORS conformance cannot be determined without them.

The applicant also argues that should the Committee require these studies prior to issuance of the FSA, they should only require that they be provided by Western. (White Paper, p. 6, fn. 7.) The transmission owners and Cal-ISO require individual System Impact Studies to identify reliability impacts on their systems and may not take responsibility for identifying impacts and considering mitigation measures for other systems. They may, therefore, conclude that a short circuit and a stability analysis be performed individually for each system.

A Western study by itself is insufficient because the proposed new 500 kV bulk power line would be a part of transmission Path 46 (West of the River flow) and staff believes that with its outage under a fault condition there may be serious voltage impacts at SCE's Devers Substation (a major bulk power junction in Southern California) or the fault may cause generator stability problems at the Buck Blvd. Substation. Additionally, there could be other problems upon outage of other non-Western bulk power lines of Path 46 or Path 49 (East of the River). Given these possibilities, staff has requested separate System Impact Studies from Western, SCE and IID.

V. If the Commission proceeds to certify the project without the necessary information identified by staff, no conclusions about this project's effect on the transmission system could be made regarding LORS conformance, environmental impact, feasibility of mitigation, or the scope of the project.

Without the information requested by staff, the Commission would be certifying a project absent critical input from affected transmission owners and the Cal-ISO and without determining whether mitigation of potential impacts is feasible. This is a serious concern because the transmission system being analyzed in BEP II is completely different and more complex (due to the combination of power flows from BEP I and BEP II and the proposed addition of a 500 kV bulk power transmission line) than that analyzed in BEP I. While the initial TSE analysis for BEP I indicated there would be firm transmission capacity for the project, the upgrades analyzed by staff and expected to provide such capacity for BEP I never occurred. Therefore, instead of the current transmission system being able to easily support all of BEP I's 520 megawatts, in reality it can only provide firm transmission capacity for approximately 167 megawatts. The system is constrained and the feasibility of alleviating the constraints through mitigation to provide transmission capacity for BEP II is indeterminable without the information requested by staff.

Because the system cannot currently accommodate BEP I it is critical that information be provided to ensure the system will be able to accommodate BEP II. Otherwise, the Commission runs the risk of certifying a project that is merely stranded generation. Aside from the policy concerns of expending Commission resources on a project that may not alleviate the projected electricity shortfall, certifying stranded generation would be in direct contravention of the purpose of the Commission's application proceedings, which is to ensure that any projects certified provide a reliable supply of electrical energy. (Cal. Code Regs., tit. 20, §1741.) Additionally, it would be difficult to meet the requirement that the written decision discuss the public benefits of the project as it is unclear what public benefits would be provided by a power plant that could not provide electricity to the grid. (Pub. Resources Code, §25523(h).) Likewise, it would be difficult to make the necessary CEQA comparison between a proposed power plant that is

stranded and the no project alternative; neither project could provide electricity to the grid, thus, the no project alternative would presumably be preferable since it would result in fewer impacts.

Alternatively, if the Commission certifies a project that is stranded generation with the anticipation that a viable interconnection configuration will be identified at some future point, then the Commission will have failed to analyze the whole of the action in contravention of CEQA and Commission regulations.

Additionally, any feasible mitigation that is ultimately identified could entail substantial physical upgrades which could result in significant environmental impacts. Any physical changes to accommodate the project must be analyzed pursuant to CEQA as part of the proposed project or as foreseeable consequences of the project. Because system impacts and mitigation have not been fully analyzed, the need for system upgrades and their potential environmental effects are similarly unknown.

VI. Conclusion

For the reasons specified above, staff and the Commission need the outstanding TSE information in order for staff to complete the FSA and provide information sufficient to support findings that the Commission must make. Staff, thus, recommends that the Committee order the applicant to provide the TSE data listed in the PSA on pages 1-8 through 1-10 (included herein as Appendix F).

Dated: January 16, 2004

Respectfully submitted,

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